ters of three as in the living pitch pine, and a number of cypress-like trees which were once widely spread over the world but are now extinct. There was also a fan palm with very large leaves, which was perhaps the remote ancestor of the palmetto. Among the deciduous trees there were wax berries (*Myrica*) of two kinds, walnuts, many willows with long, narrow leaves, oaks of the type of the living black oak, fig trees of many kinds, and several magnolias. Among the smaller trees or shrubs there were soapberries (*Sapindus*), bittersweet, sumac, laurels and cinnamons nearest to forms now confined to the Old World, and three kinds of eucalyptus, the living representatives of which are now native to Australia. The remote ancestors of the persimmon were also present, as well as a number of other kinds that are without vernacular names. From the careful study of this ancient flora which has been preserved in fossil form in the rocks, it has been possible to draw certain tentative though apparently reasonable conclusions as to the conditions which prevailed in South Carolina and Georgia when it was growing. These indicate that shallow seas extended inland over 100 miles from the present Atlantic coast; that there was a considerable elevation and relief of the Piedmont area to the west; that the river gradients were high and the streams numerous and more or less torrential in character; and that there were swamps along the lower courses of the streams. The fossil plants indicate that there was a mild though not a strictly tropical climate, without marked seasonal changes—in fact, there is no evidence that frost occurred. The rainfall was abundant, as shown by the general character of the flora, as well as by certain features observed on some of the leaves and known as the "dripping points." The later or Eocene flora has been found only in the state of Georgia and is relatively small, as it numbers only 17 species. All the species represent northward migrants along the Eocene seacoast from equatorial America. They include West Indian palms, plants of the wonderful mangrove swamps that skirt the tidal shores in the tropics of both hemispheres, and remains of the golden fern whose present-day descendants lead a gregarious existence in the coastal swamps of the torrid zone. All these Eocene plants are types of the Florida keys, Antillean islands and Central American shores and clearly indicate that in middle Eocene time the climate of Georgia was much warmer than it was either during the Upper Cretaceous epoch or at present.

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## *UNIVERSITY AND EDUCATIONAL NEWS*

ANNOUNCEMENT has been made by Yale University that members of the Lauder family of Pittsburgh, Pa., and of Greenwich, Conn., were the donors of the $400,000 fund recently pledged to the Yale Medical School. It will be known as the "Anna M. R. Lauder Fund," in memory of the late Mrs. George Lauder. The donors make the stipulation that a memorial professorship in public health be established for the benefit of the state of Connecticut.

A GIFT of $13,750 has been made by Mr. D. D. Stewart, of St. Albans, to the University of Maine, to discharge the remaining indebtedness on Stewart Hall, the College of Law building in Bangor.

THE merging of the Starling-Ohio Medical College with Ohio State University will become effective next September. Buildings and equipment valued at approximately $250,000 will be added to the university. No state aid will be asked at present, it was announced, although it had been previously planned to ask the legislature for an appropriation of $25,000. Beginning with the session of 1914–15, the medical college will require for entrance one year's work of college standard, which must include instruction in chemistry, physics and biology.

HERR CAESAR SCHOLLER, of Zurich, has made an additional gift of 15,000 Marks to the Philogenetic Museum at Jena, to which he had previously given 115,000 Marks.

DR. B. L. ARMS has been appointed professor of preventive medicine in the medical department of the University of Texas.

In the department of geology of Northwestern University the following appointments have been made, to take effect on September 1, 1914: Joseph E. Pogue, of the U. S. Geological Survey, to be associate professor of geology and mineralogy; William H. Haas, of the University of Chicago, to be instructor in geology and geography; Henry R. Aldrich, of the Massachusetts Institute of Technology, to be instructor in mining and metallurgy; John R. Ball, of Northwestern University, to be assistant in geology.

Mr. F. E. E. Lamplough, of Trinity College, has been appointed demonstrator of chemistry in the University of Cambridge.

Mr. D. T. Gwynne-Vaughan, professor of botany in the Queen's University, Belfast, has been appointed to the professorship of botany at University College, Reading, vacant by the resignation of Dr. Frederick Keeble, F.R.S., who has been appointed director of the Experiment Station and Gardens of the Royal Horticultural Society at Wisley.

Dr. Niels Bohr, of the University of Copenhagen, has been appointed reader in mathematical physics in the University of Manchester.

Dr. August Gutzmer, professor of mathematics at Halle, has been elected rector of the university for the coming year.

Dr. Eugene Korschelt, professor of zoology and comparative anatomy at Marburg, has been called to Leipzig, but has decided to remain at Marburg.

## *DISCUSSION AND CORRESPONDENCE*

### LIGHTNING FLASHES

To the Editor of Science: If often becomes necessary for me as editor to refer special questions that arise to those who are better versed in the knowledge of some special branch of physics.

I should be glad if any one of your readers who has considered the question of the oscillatory character of lightning would give me a short report, from either a theoretical or an observational point of view, as to what is known on this subject, or his own experience therein. An elaborate paper on this subject was published in the *Meteorologische Zeitschrift* for September, 1913, by Professor Dr. Josef Mayer, of Freising, Bavaria, defending the conclusion that although the lightning flash is frequently oscillatory, yet it is also often of a complicated nature in which every variety of the discharge can occur, namely, both a preliminary, a principal, a partial and an after discharge; partial discharges of a simple nature as shown by Feddersen, or of a double nature as shown by Walter; moreover, the discharge of thunder-clouds may also, under certain conditions, be continuous, but under others, oscillatory or again pulsatory.

This subject is one that interests every scientist who is subject to danger from lightning. I hope to receive responses from electricians and physicists whose experiments and experience tend to elucidate the subject.

Cleveland Abbe
U. S. Weather Bureau

### A NEW FORM OF COLLECTING PIPETTE

The pipette described below has proved very useful to the writer. It is made from a calcium chloride tube about 200 mm. long and the ordinary 50 c.c. rubber bulb commonly used with the larger rubber-bulb pipettes. Both are stock articles and may be readily procured from laboratory supply houses. The calcium chloride tube used in the pipette figured consists of a glass bulb about 35 mm. in diameter blown in a glass tube of 16 mm. diameter and about 120 mm. long. This tube required to be heated over a flame and drawn out to the desired diameter for the pipette mouth. From the opposite end of the glass bulb there extends a tube about 6 mm. in diameter suitable for attachment of the rubber bulb.

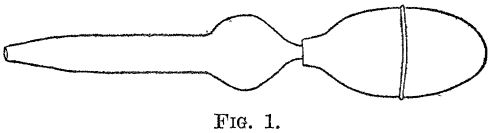

Fig. 1.

This form of pipette may be used in handling in water any small or delicate object up to six or eight mm. in diameter. (Not